

NEW ENGLAND NOTES

CAREX KOBOMUGI OWHI, AN ADVENTIVE SEDGE NEW TO NEW ENGLAND

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Carex kobomugi Owhi is a dioecious sand-dune species native to Japan which was first collected in North America by C. W. Townsend in 1929 (Fernald, 1930) and was subsequently discovered on Cape Henry, Virginia, by Frank Egler in 1941. Fernald (1950) reported that it occurred from Ocean County, N.J., to eastern Virginia, although the only collections in herbaria (GH or NY) are from these two localities. Five additional populations from Virginia, and three at Sandy Hook, N.J. are currently known (Stalter, 1980). Naturalized populations of *Carex kobomugi* also occur in New England, at a distance of more than 200 miles north of the New Jersey population. Svenson (1979) reported finding this species in Falmouth, Massachusetts, ca 2 miles inland, in a disturbed sand pit (pers. comm.). *Carex kobomugi* was discovered in Rhode Island in early January, 1982, by Mr. Richard Champlin, and was checked by me on January 25th. This population is located on East Beach, Charleston, Rhode Island, in the Ninigret Conservation Area (Quonochontaug Quadrangle) 1/2 mile east of the parking lot. The main population occupies an area of about 170 m² in a blow-out in the primary dune. Both staminate and pistillate plants are present. Scattered plants were found growing in loose sand inshore from the blow-out, and also at about 1/4 mile east of the parking lot. A few individuals of *Ammophila breviligulata* and *Cakile edentula* occurred near the margins of the population.

The plants are quite conspicuous, with coriaceous yellow-green leaves that are 4–6 mm wide, up to 20 cm long, and somewhat contorted. The inflorescence of tightly clustered unisexual spikes forms an oblong head 4–6 cm long which is terminal on a triquetrous culm up to 20 cm tall. The erect, plano-convex perigynia with winged margins and dorsal suture place *Carex kobomugi* in subgenus *Vignea*, although its three stigmas are anomalous in this group. *Carex kobomugi* and the closely related species *C. macrocephala* Willd., which occurs along the Pacific Coast from northern Japan

to Oregon, comprise section *Macrocephalae* Kükenthal. These were not recognized as distinct species in the monographic treatments of Kükenthal (1909) or MacKenzie (1935), despite the numerous, consistent, morphological differences between the western North American/northern Japanese and the southern Japanese populations (Table 1). Stacey (1937) clarified the taxonomic history of these two taxa, and confirmed that *Carex kobomugi*, rather than *C. macrocephala*, occurred in eastern North America.

Akiyama (1939) described the differences in foliar anatomy which distinguish these taxa. Leaves of *Carex kobomugi* have a conspicuous multilayered adaxial hypodermis which is not found in *C. macrocephala* (or, to my knowledge, any other species of *Carex*). Leaves of plants from Seaside Park, N.J. and Charleston, Rhode Island have the multiple hypodermis characteristic of *Carex kobomugi* in Japan.

Observations of the East Beach population suggest that *Carex kobomugi* is able successfully to invade disturbed areas of the pri-

Table 1. Morphological differences separating *Carex kobomugi* and *C. macrocephala*.

CHARACTER	<i>C. kobomugi</i>	<i>C. macrocephala</i>
Perigynium		
orientation	erect	reflexed
shape	elliptical	ovate
shape of base	actute	cordate
margins	entire	lacerate
number of dorsal nerves	ca 20	10-15
number of ventral nerves	ca 20	6-9
Shape of apex of pistillate scales	serrate	entire
Achenes		
length	4-7 mm	3-4.5 mm
shape	oblong, not contorted	elliptical, contorted

mary dunes which result, in many cases, from the destruction of *Ammophila* by trampling. Small (1954) suggested that this species, once established, is able to out-compete *Ammophila*. It would be interesting to evaluate the potential of *Carex kobomugi* to stabilize disturbed dunes, as it appears to survive in sites where *Ammophila* does not, and may provide more resistance to erosion by wind than does *Ammophila*. The range extension of this species may be coincident with increased disturbance of the coastal dunes.

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NOTE ON THE STATUS OF
AGALINIS MARITIMA (RAF.) RAF. IN MAINE

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Agalinis maritima (Raf.) Raf. (= *Gerardia maritima*) occurs on salt marshes along the eastern seaboard from Nova Scotia to Florida, Mexico, and the West Indies. It was included in Rare and Endangered Vascular Plant Species in Maine (Eastman, 1978) because there were only three historical Maine records (Wells 1880, Wells 1916, Alna 1966) and there was little contemporary knowledge of the status of the species in the state. In 1981 the Alna site